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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/544,206

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EXAMINER

ZHU, WEIPING

ART UNIT

PAPER NUMBER

1742

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/05/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/544,206

Applicant(s)

MOULIN, ANTOINE

Examiner

Weiping Zhu

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 13-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) 4-12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08).  
Paper No(s)/Mail Date 8/2/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-12, drawn to a process for producing a steel strip, classified in class 148, subclass 603.
- II. Claims 13-22, drawn to a steel strip, classified in class 420, subclass 104.

The inventions are independent or distinct, each from the other because:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the steel strip as claimed can also be produced by a materially different process such as extrusion.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Richard Turner on January 24, 2007 a provisional election was made with traverse to prosecute the invention of I, claims 1-12. Affirmation of this election must be made by applicant in replying to this Office action. Claims 13-22 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Objections***

2. Claims 4-6, 9 and 11 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only, and/or, cannot depend on any other multiple dependent claims. See MPEP § 608.01(n). Accordingly, the claims 4-6, 9, 11 and their dependent claims 7, 8, 10 and 12 (claim 7 is dependent on claim 6, claim 8 on claim 7, claim 10 on claim 9 and claim 12 on claim 11) have not been further treated on the merits.

The "the steps consisting in" in line 17 of claim 1 should be deleted.

The "steel" in line 35 of claim 2 should be changed to the "slab".

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakaoka et al. (US 4,336,080) in view of Chatfield et al. (US 4,159,218).

With respect to claims 1 and 2, Nakaoka et al. ('080) disclose a method for producing a cold-rolled dual-phase steel sheet from a slab with a chemical composition comprising by weight: C: 0.02-0.06%; Mn: 0.05-0.30%; N: <0.005%; Al: 0.02-0.06%; P: 0.01-0.06%; Si: <0.20% (col. 5, line 49 – col. 7, line 10), which overlaps the claimed composition except Cr. The said method comprises:

hot-rolling the steel slab to prepare a hot-rolled steel strip (abstract);

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coiling the hot-rolled strip at a temperature within the range of 650° C to 770° C (abstract);

cold-rolling the strip with a reduction ratio of 75% (col. 10, lines 34-44);

continuous-annealing the strip by heating the strip to at a temperature within the range of 750° C to 880° C and holding it there for a pre-determined time (i.e. soaking) (abstract);

cooling the strip to 750° C by a gas jet followed by a rapid cooling by a water jet with a quenching rate of about 2000° C/sec (col. 10, lines 50-53);

over-ageing the strip at a temperature within the range of 260° C to 360° C (abstract).

Nakaoka et al. ('080) do not teach that the slab contains chromium as in the instant claims 1 and 2.

Chatfield et al. ('218) disclose a substantially identical method for producing a ferritic martensitic dual-phase steel strip containing 0.1-0.7 wt% of Cr (abstract), which overlaps the claimed chromium range in the instant claim 1.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add 0.1-0.7 wt% of chromium into the slab as disclosed by Chatfield et al. ('218) in the composition of Nakaoka et al. ('080) in order to increase hardenability at a cost factor significantly lower than that found in a steel having an increased manganese content as disclosed by Chatfield et al. ('218) (col. 2, lines 8-16).

The final strip has a structure of ferrite and a low-temperature transformation phase (abstract). The volume ratio of the low-temperature transformation phase is up to

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10% of the structure as a whole (col. 9, lines 3-7). Nakaoka et al. ('080) do not specify that the low-temperature transformation phase is martensite as claimed. However, it has been well held where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical process, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977), MPEP 2112.01 [R-3] I. In the instant case, the cold-rolled dual-phase steel sheet of Nakaoka et al. ('080) in view of Chatfield et al. ('218) is identical or substantially identical to that of the instant disclosure, therefore a prima facie case of obviousness exists. The same ferritic and martensitic structure would be expected in the steel sheet of Nakaoka et al. ('080) in view of Chatfield et al. ('218) as in the claimed steel strip.

The contents of C, Mn, Si, P, Al and N in the slab of Nakaoka et al. ('080) overlap the claimed contents in the instant claims 1 and 2; The coiling temperature range of Nakaoka et al. ('080) is within the claimed range in the instant claim 1; The cold-rolling reduction ratio of Nakaoka et al. ('080) is within the claimed ranges in the instant claim 1; The annealing temperature range of Nakaoka et al. ('080) overlaps the claimed ranges in the instant claim 1; The over-ageing temperature range of Nakaoka et al. ('080) overlaps the claimed range in the instant claim 1; The percentage of the low temperature transformation phase in the whole structure of Nakaoka et al. ('080) in view of Chatfield et al. ('218) also overlaps the claimed martensite percentage in the instant claim 1. The overlapping ranges establish a prima facie case of obviousness, MPEP 2144.05 I.

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With respect to claim 3, Nakaoka et al. ('080) disclose that slabs heated to 1250° C were hot-rolled and coiled (col. 10, lines 34-39). Nakaoka et al. ('080) do not specify the hot-rolling finishing temperature range. However the hot-rolling finishing temperature is a result-effective variable, because it would directly affect the coiling temperature which would in turn affect the Lankford value (r) of the steel sheet as disclosed by Nakaoka et al. ('080) (col. 7, lines 17-23). Therefore, it would have been obvious to one of ordinary skill in the art to optimize the hot-rolling finishing temperature of Nakaoka et al. ('080) in view of Chatfield et al. ('218) in order to achieve the desired properties. See MPEP 2144.05 II.

### ***Conclusion***

4. This Office action is made non-final. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Weiping Zhu whose telephone number is 571-272-6725. The examiner can normally be reached on 8:30-16:30 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WZ

1/29/2007

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